

**SYSTEM AND METHOD FOR CONDITIONING OF INTAKE AIR FOR AN
INTERNAL COMBUSTION ENGINE**

ABSTRACT OF THE DISCLOSURE

A system for conditioning intake air for an internal combustion engine includes

5 an oxygen separation system. The oxygen separation system includes an entry port for ambient air, and at least two separate exhaust ports through which separate exhaust streams are drawn by separate suction sources. The oxygen separation system further includes a plurality of gas-permeable electrodes that are charged to provide a high-voltage static electric field inside the separator. An exhaust stream

10 taken from the anode side of the separator is enriched in oxygen relative to ambient air. This oxygen-enriched stream is provided to an internal combustion engine for use in combusting fuel.